NEHES MEMBER INVENTS CPR DEVICE FOR LARANGECTomy PATIENTS

Editors note: Bud Myers is a long time NEHES member working in the Plant Operations department at Fanny Allen Hospital in Winooski, VT. The following story is reprinted from an article appearing in the Burlington Free Press.

The basics of cardiopulmonary resuscitation dictate that a person breathe air into the mouth of the person needing assistance.

Sounds simple enough, but not for people who have had laryngectomies and can no longer breath through their mouths or noses. That is, until Bernard “Bud” Myers of Williston developed a CPR device for people who have had the throat surgery.

“I would like to see just about every laryngectomy patient, every hospital and every rescue squad have one,” Myers said Monday. A laryngectomy surgically removes the voice box.

A 3 1/2 year survivor of cancer of the larynx, Myers developed the device with the help of Judy Martin, a Fanny Allen Hospital registered nurse, in 1990. After his laryngectomy, Myers found that he was unable to fulfill CPR training that is encouraged for employees at Fanny Allen. He has worked in plant operations at the Colchester hospital for 20 years.

“I said, ‘We’ve got to come up with something so I could do CPR,’” Myers remembered. So he and Martin, who was conducting CPR training for the hospital, went to work.
What they came up with is a mouth and nose mask connected to a one-way valve and a smaller mask on the other end. The large mask fits over the face of the person needing CPR, and the smaller one fits over the hole in Myer’s neck where he breathes.

“It’s flexible,” said Myers, who is certified to do CPR. The device can be used by or on people who have had laryngectomies, he said.

“It (the device) made me feel good that I could do what I couldn’t do previously,” he said. “It put me back where I was before.”

Myer’s device has gained such widespread attention that he has been invited to speak to the medical affairs committee of the International Association of Laryngectomy during its convention next week in New Orleans.

He said the hospital is applying for a patent for the device, and he is working on getting it manufactured.

Myers is the co-founder of laryngectomy and neck cancer support groups in Williston and Rutland and a spokesman against smoking and drinking, the main causes of cancer of the larynx. He encourages others like him to keep going.

“Don’t get discouraged,” he said, “Carry on with life.”

**PRESIDENT’S REPORT**

Greg Oles is off and running with a survey of New England hospital engineering statistics. (Please cooperate by sending the survey back as soon as possible.)

The Fall 1992 Seminar is on schedule with a Committee headed by Tom Humphrey. A major promotional effort is being made to convince Engineers to attend in spite of the economic situation.

The spring 1993 Seminar is not too far off. Rhode Island, the sponsor state, will have a preliminary report for the NEHES board.

ASHE is in the midst of a new election of officers. Three of our members are on the ballot: John Crowley for President, and Robert Loranger and Dana Swenson for Region 1 Representative.

Our nominating committee has been active these past couple of months selecting a slate of officers to present at the fall Board meeting.

SMDA - It’s another one of those new HATs we’re given to wear. More procedures and protocols to establish. Another one of those spare time projects that must be done right away...

Our BY-LAWS committee, George Hawley and Jack Gosselin have been very busy behind the scenes. The Board will hear their report.

JOBS. I have been contacted by both Headhunters and Members...(Please contact me if you are looking or have an opening.)

The next Board meeting will be at the Fall Seminar.

Respectfully summed,

Jack Berger, PE, President
NEW ENGLAND STATES REPORTS

CONNECTICUT REPORT

The Connecticut Hospital Engineers conducted their last general meeting on May 28, 1992 at the CT Hospital Assoc. in Wallingford, CT.

The meeting was well attended by the members. Mr. Anthony Caliguri, Assistant Vice Pres., Shared Services made a short presentation on the services available to hospital engineers from C.H.A. Mr. Caliguri reviewed the current contract list that involves over seventy vendors and more than two hundred fifty products and services. Current contracts run the gamut from Asbestos Abatement and Air Conditioning Equipment to Water Treatment Systems and Work Clothing.

The members expressed general satisfaction with the service provided by C.H.A. It was suggested by one of the members that the next major project C.H.A. should explore would be the group purchase rates for electricity and gas. It was acknowledged that this would require new legislation. Mr. Caliguri noted that C.H.A. has a full time lobbyist on staff for just this sort of project with a survey regarding energy consumption of all thirty-two member hospitals combined with the information already on file and report these results back to the members.

In addition a presentation on the use of ozone gas as a replacement treatment for traditional chemical water tower treatment was made by Mr. Edwin Nichols of Solutions Inc., Branford, CT.

During the general meeting I raised the issue of sharing the responsibility for the N.E.H.E.S. Spring Seminar among the state organizations. This issue generated a significant amount of concern and discussion among the members. The general feeling was that the Boston & Massachusetts engineering groups were doing an excellent job. Sharing the responsibility among the states could lead to the deterioration of this valuable program. The issue was put to a vote. The majority of the members voted against volunteering to share the responsibility for the Spring Seminar.

The Connecticut Hospital Engineers did not conduct any general meetings since the last general meeting on May 28, 1992 at the Connecticut Hospital Assoc. in Wallingford, CT.

The Executive Board of the CT Hosp Engineers met on August 6, 1992 at Veterans Memorial Hospitals' health club in Meriden, CT. Guenther Ohler, President announced that due to the demands of his position, i.e. V.M.H. is embarking on a complete facility replacement program, he will no longer be able to fulfill his obligations as president to C.H.E.S. and would be stepping down effective this date.

It was also announced that Brian Murphy, Treasurer has left the hospital field to pursue his Law degree.

Chris Burney, Vice President will step in into the presidents chair for the remaining twelve months of Guenther's term. Chris Burney then announced his slate of officers for the coming year.

Vice President: Ed Browne - Waterbury Hospital
Treas: Jack McCarthy - New Britain Memorial Hospital
Sec: Bill Zipadeli - H.D. Altobello Children and Youth Ctr.
By-Laws and Steering: Ed Morrone - Milford Hospital
Historian: Carl Kallgren - retired Programs and Education: Bill Waldron - Hospital of St. Raphael N.E.H.E.S. Representative - Robert Palumberi - St. Francis Membership: Chris Kelly - Waterbury Hospital
Newsletter: Larry Orkins - Norwalk Hospital
Social Committee: Lee Lewandowski - Manchester Mem. Hospital

Bill Waldron presented a tentative list of education programs for the upcoming year. They are as follows:

CT State Health Dept Code Review Thermo-Scanning Motivating your work force Staffing levels Total Quality Management TB/HIV HVAC Infection Control Methods

The annual general society meeting will be held on September 25, 1992 at a location to be announced.

Edward Brown
CT Representative NEHES

MAINE REPORT

The Maine Society of Hospital Engineers met on May 20th at the Rustler's Steak House in Augusta, ME. Lunch was from 11:30 to 12:30 followed by a presentation from Mr. Mike Picher from Lexikon Microsystems on personal computers. Mr. Picher discussed where we are with personal computers and what we can expect to see in the next few years. There was a lively question and answer session with the following items being discussed.

A) What kind of PC should be purchased today, 386SX, 386, 486,?
B) How much memory should we have?
C) What are flash cards?
D) What about networking?
E) Are CRT's bing replaced?
F) What's happening
G) What kind of machine should I buy?
H) What about hard drives?

The engineers in attendance left with a much better understanding of what is available and what to plan for in personal computers.

Following Mr. Picher's presentation there was group discussions on our next meeting and other topics of interest to the group.
On June 25th a meeting of the Maine Hospital Engineers was held in Bangor at the Eastern Maine Medical Center. Twelve to fifteen members were present to hear a presentation from Mr. Bill Kulas, Industrial Hygienist/Safety Manager on Indoor air quality (IAQ). This was an excellent presentation and gave each of the engineers much more of an insight into this problem and how to go about solving their problems with indoor air quality. The engineers were treated to lunch at the Medical Center, thanks to the organization and arrangements of Mr. John Leonard.

After the meeting all the engineers were invited to tour a new 100 bed Chemical Dependency Hospital, and was given this very informative and thorough tour by Mr. Mike Bradshaw. Mike is the new director of engineering at this facility and has been charged with getting everything in operation and ready to open.

In August the Maine Hospital Engineers held a summer picnic at the home of Mr. Percy Hanscom, (former president of NEHES). This was a great opportunity for the engineers to meet informally with more time to discuss the problems of their jobs and to share solutions to these problems. In addition it was an opportunity for the wives to become acquainted which should promote their interest in attending future seminars.

The next meeting of the Maine Hospital Engineers will be on September 24th. A meeting is being planned for a representative from the power company to discuss electromagnetic fields. This meeting is planned for The Penobscot Bay Hospital in Rockland.

The next meeting will also involve selection of offices for the coming year.

Don Garrison
Maine Representative

MASSACHUSETTS REPORT

Congratulations are in order for the following new members who were accepted at the last board meeting:

James Silva, Waltham/Weston
Brian Wiseman, M.G.H.
Kenneth Johnson, Med. Ctr. of Central Mass.
Donald Sliwa, Springfield Municipal
Frederick Nordhal, Goddard Richard Butler, Brigham & Women's
Gregory Oles, Franklin Med. Center
Michael Burns, Burbank
James Del Pozzo, Goddard
John Duggan, St. Vincent

Recently, I had a telephone conversation with Ernie Dickinson in Northampton who has been active in reorganizing the western group. The results have been encouraging and is on the right track in having a bona fide group represent the western part of the commonwealth. Good luck Ernie!

There have been articles in the local newspapers where Lahey Clinic of Burlington is interested in managing the J.B. Thomas Hospital of Peabody. The article states that the trustees of J.B. Thomas are in favor of Lahey over the other bidder who is Salem Hospital.

Waltham/Weston Hospital is looking into a computerized preventive maintenance program.

Informational letters on the upcoming Fall Seminar were sent to all Mass. members, as well as, to administrators to over 150 hospitals in the Commonwealth. To date, I have received several telephone calls inquiring about the seminar and their names have been passed on to Steve Cutter for circulation.

J.C.A.H.O. upcoming inspections:
July Noble Hospital, Westfield
August Emerson Hospital, Concord
Sept Metro West, Framingham
Atlantic Care, Lynn

Lahey Clinic was given an extension to review their intent on purchasing the J.B. Thomas Hospital in Peabody.

Leominster Hospital has a vacant position for an Assistant Director of Engineering, contact Mr. Duncan.

Cooley Dickerson Hospital has just completed the following projects:
New HVAC system for the O.R.'s
New birthing rooms

Western group held a meeting in July with the following serving as officers:
V.P. - Greg Oldes, Franklin Medical Center
Treasurer - Ernie Margeson, Cooley Dickerson
Secretary - Pierre Richard, Baystate Med. Center

Thomas Whittaker of Baystate Medical Center hosted a seminar on Johnson Controls.

Transitions/Milestones

Peter Demetre has accepted the position as Manager of Physical Plant at the New England Medical Center. Robert Loranger, the previous Manager, had been promoted to Director of Facilities last fall.

Phil Kenny, Director of Maintenance, has left Univ. Hospital in Boston to take a similar position at Quincy Hospital.

With the recent merger at Metro West (Leonard Morse and Framingham Hospital), Robert Bornstein, Director of Facilities at Leonard Morse was recently released.

Terry Ringer
Massachusetts Representative
NEW HAMPSHIRE REPORT

The N.H. Society of Hospital Engineers has been holding meetings throughout the summer. This report will summarize those meetings.

In general the meetings were well attended considering vacations schedules and the typical staffing problems that occur during this time of year.

1. Throughout the summer the groups stayed focused on the needed preparations for the New England Fall Seminar. Later this month the Fall Seminar Chairman and some of his team will be closing the last details with the hotel. Being part of this team has been a very rewarding experience for me, to be exposed to this high a level of energy, commitment, and talent all tightly focused produces “A LOT OF FUN”.

2. The group was happy to put behind us our JCAHO surveys in general everyone did well except in the area of Safety Mgmt. My own informal survey of the members indicates that about 80% will receive a focused review by the JCAHO shortly after the New Year. I would appreciate any feedback from this group related to this subject.

3. The next meeting will be held at the N.H. Hospital Association, on September 17, 1992.

Stephen Shaw
New Hampshire Representative

RHODE ISLAND REPORT

The last meeting of the R.I. Engineers was cancelled. This was unfortunate, since we do not regularly schedule meetings in June, July and August.

Our next meeting will take place on September 11, 1992, at 11:00 am. The host for this meeting will be Arthur O’Rourke. It will take place at St. Joseph’s Hospital, 21 Peace St., in Providence. Please feel free to contact Arthur or Pat Duffy as the September date nears, to confirm your attending by calling 456-4391.

I have been contacted by a number of vendors requesting a meeting during the summer months at a local restaurant. I will keep you informed.

The R.I. Group is encouraged to make their plans now for the upcoming Fall Seminar starting, October 27, 1992, in Porthsmouth, NH.

We have also called a number of vendors soliciting their providing us with a booth again at our Fall Seminar. We would also like it to be known that we are patiently waiting on the Research Project by Greg Oles.

Our compliments to Tobey Clark and his staff on the Newsletter. It is, indeed, improving with each issue.

The results of a JCAHO Survey is always welcomed.

May I offer some feedback on the subject of “Indicators for the 94-95 PTSM Standards that was submitted by Technology in Medicine, Inc. at out last meeting. One could readily see a lot of effort was directed at this fine piece of work. I believe it looked good, is well organized, and in general I liked it. I look forward to more. T.I.M. is to be complimented.

The following is an excerpt taken from a Women & Infants inhouse notice.

Rhode Island Hospitals have joined in an all-out protest against a proposed tax on hospitals. Trustees, auxiliaries, and employees from hospitals throughout the State are being asked to call or write Governor Sundlun and the General Assembly. Their goal is to eliminate a provision in the Governor’s FY 93 state budget that would tax hospitals.

In late February, when Governor Sundlun released his proposed FY 93 state budget, he spoke to “hard choices”--choices to reduce state programs to the tune of $176 million. Nearly $30 million of the Governor’s proposed budget reductions came from human services -- and nearly $18 million of that came from state payment to hospitals. Those proposals unleashed a storm of protest among health care providers, advocates for the poor, and others. the State response? Raise additional revenue by imposing a “provider tax” on group homes for the mentally retarded, nursing homes, and hospitals.

The Hospital Association of Rhode Island (HARI), which represents every private hospital in the State, has unanimously voted to oppose provider taxes. It is their firm belief that health care institutions should remain tax-exempt. Why? The charitable mission of hospitals is more dramatic here in Rhode Island than perhaps in any other state. Rhode Island is the only state with no public acute care hospital -- leaving the State’s private institutions to fill this void and to incur this expense. Last year, we provided $44 million in uncompensated care statewide. When payment shortfalls from Medicare, Medicaid, and General Public Assistance are factored in, that figure climbs approximately $90 million. But that is just part of the story. Hospitals also provide millions of dollars worth of in-kind services to their communities annually.

Recognizing the depth of Rhode Island’s fiscal crisis, HARI’s member hospitals offered the Governor an alternative to the provider tax. The hospitals proposed that the State save several million dollars by suspending inpatient hospitalization coverage for General Public Assistance clients, with the assurance that Rhode Island’s network of private,
nonprofit hospitals would provide their care without reimbursement in any form. This unprecedented offer of compromise on the part of our hospitals was rejected by the Governor who said he will stand firm in his intent to impose a tax on hospitals.

If we are to convince the Governor and the General Assembly that a hospital tax is unfair and unwise, the participation of every member of the hospital community is critical. If every one of us participated in the campaign against the hospital tax, more than 30,000 calls and letters could be generated statewide. The campaign has started.

Our next meeting will take place on September 11, 1992, at 11:00 AM. The host for this meeting will be Arthur O'Rourke. It will take place at St. Joseph's Hospital, 21 Peace St, in Providence. Please feel free to contact Arthur or Pat Duffy as the September date nears, to confirm your attending by calling 456-4391.

It would be nice to see the attendance improve at our meetings - Involvement is also important.

Flyers will be forthcoming asking for the name of a Hospital Engineer to serve as Chairman for 1993. Please realize that I have served in this capacity for six years and would welcome relinquishing this position to someone else.

Again, our compliments to Tobey Clark and his staff on the Newsletter. It is, indeed, improving with each issue. Most noteworthy is the secretary's report each month. Nice job Bob Lord.

The results of a JCAHO Survey is always welcomed. We should like to hear from any of you that were surveyed in 1992.

I encourage the Rhode Island Group to make plans to attend the 1992 Fall Seminar in Portsmouth, NH. The dates are October 27-30. A list of participating vendors will be made available for your review. If you have a favorite vendor who is not on the list we suggest that you give them a call.

My compliments to Greg Oles (NEHES) who did the research for the Hospital Engineering Comparison Survey. We look forward to the results at the Fall Seminar.

Ken Boyer
Rhode Island Representative

VERMONT REPORT

Since the last meeting of the NEHES board, the Vermont Hospital Engineer's Society went into its summer recess. This is not to say that activity ceased. To the contrary, many of the hospital's within the state seem to be particularly busy with either construction in progress or projects on the drawing boards. Other focuses seem to key on making preparations for our next JCAHO survey (which for most Vermont hospitals will be in the spring of 1993). Last but not least, the Vermont Hospitals Engineer's have begun to turn their attention to gearing up for the big job of hosting the 1993, NEHES fall seminar.

A number of transitions have also occurred within the Vermont group. Most notable to me is my succession of Bob Cummings as Director of Facilities Management at NEV in St. Johnsbury. Bob has fulfilled a long standing desire by forming Arrowhead Engineering and going into private consulting practice. I was succeeded at Copley Hospital by Gordon Lewia who himself is a most competent and capable engineer.

As Bob Cummings was the alternate NEHES state rep., the Vermont Chapter will have to select another individual to succeed Bob in this role. Jack Gosselin and Theron Manning have both agreed to head the nominating committee and busy themselves with canvassing for candidates. With such strong people working on this task, I am confident that we will present a number of high quality individuals for election at the 1992 fall seminar.

Vermont is very proud that Dana Swenson, PE - Director of Plant Operations at MCHV has decided to run for ASHE Region 1 representative. As many of you may know, Dana is the 1993 NEHES Fall Seminar Chairman. He is also Secretary of the Vermont Hospital Engineers Society. Other biographical information is as follows: Having received his formal education at the Naval Academy at Annapolis, Dana is a mechanical engineer by trade and is a registered electrical engineer. Before entering the hospital engineering field, Dana spent a number of years as an engineering consultant.

The Vermont Hospital Engineer's heartily endorse both Dana Swenson as Region 1 Rep. and John Crowley as ASHE President. We ask that all NEHES members who are also members of ASHE make it a point to vote in this next election of officers. As a reminder, all ballots are due in by September 11, so vote early and vote often.

Upcoming events for the Vermont Hospital Engineer's include our annual meeting and election of officers on September 11. The meeting will be held at the Burlington Sheraton Inn in conjunction with the Vermont Hospital Assoc. annual meeting and seminar. As the Burlington Sheraton will be the site of the 1993 NEHES fall seminar and much of our meeting agenda will be devoted to planning for this event, the location could not be better. Our next activity will occur in the first week of October at the TSP fall seminar. October will finish strong with the 1992 NEHES fall seminar. Good luck NH. We are all looking forward to Portsmouth.

Mark Cappello
Vermont Representative
HOSPITAL COMMUNITY UNIFIES IN SUCCESSFUL OPPOSITION TO TAX ON HOSPITALS

Editors Note: The events occurring in Rhode Island point to a theme which may be considered in other New England states. There is a lesson to be learned.

On the afternoon of June 4, three thousand hospital employees, trustees, and volunteers gathered in the shadow of our Capital dome, at the Rhode Island State House, in a desperate attempt to save the hospitals of Rhode Island from a proposed 1.5 percent tax on revenues. They came from every corner of the state, from Westerly to Woonsocket. There were doctors and nurses, groundskeepers and housekeepers, business people and retirees - all raising their collective voice in protest of the tax proposal, which would impose a $19 million levy on the state's private, nonprofit hospitals.

Rhode Island Hospital Trustee Cynthia Baker Burns, addressing the crowd and the General Assembly, said: "Your community hospitals agree that the state of Rhode Island should provide the widest range of medical services possible for its citizens. We would consider it truly tragic if any of those services had to be cut to balance the state budget. But we would think it far more tragic if hospitals, as well, were driven to reduce services for the poor. We believe it is faulty logic to tax medical care for the poor by imposing a heavy tax burden on the very same charitable institutions which provide that care."

Baker concluded her speech with an appeal to the General Assembly: "We ask our elected officials to work with us to preserve health care in Rhode Island, as we know it. The road may be long and hard, but together we can find the answer."

Hospital Employees Voice Their Concerns to Elected Officials

Rhode Island's hospital industry, which employs 20,000 people, is the second largest employer in the state - second only to state government itself. This spring, the hospital community came together in an unprecedented demonstration of unity to oppose the hospital tax proposal. In addition to participating in the rally at the State House, thousands of hospital employees and others became active constituents - voicing their concerns to elected officials through personal phone calls and letters.

The General Assembly listened. When the state legislature adjourned in the wee hours of the morning on July 14, marking the conclusion of the longest session in twenty-one years, it had crafted a FY93 state budget which contained no provision for taxing hospitals. Instead, there was a commitment from hospital to provide free care to recipients of General Public Assistance - a commitment which will save the State of Rhode Island several million dollars, but will be consistent with the charitable mission of our state's private, nonprofit hospitals.

Tax Proposed to Soften 'Hard Choices'

The $19 million hospital tax was intended as a means of offsetting some of the deep funding cuts in human services programs proposed in Governor Sundlun's original budget. In late February, when the Governor released his FY93 budget proposal, he had spoken of "hard choices" to be made in the interest of ameliorating Rhode Island's $176 million budget deficit. Nearly $30 million of the proposed budget reductions came in the area of human services - and nearly $18 million of that came from public medical assistance programs.

The Governor's budget proposal unleashed storm of protest among health care providers, advocates for the poor, and others. An alternative plan was raised: impose new state taxes on group homes, and hospitals and reimburse those facilities for their tax payments through the state Medicaid program, bringing in federal matching dollars in amounts proportional to the state Medicaid outlay. The amount of Medicaid reimbursement received by the facilities would be proportional to the percentage of Medicaid patients they treated. For the group homes, that proportion would be roughly 100 percent. For nursing homes, it would be approximately 70 percent. But only about 10 percent of hospital patients are covered by Medicaid. Under the plan, hospitals would be forced to absorb ninety percent, or $19 million, of the total $22 million tax burden.

Hospitals Oppose Tax on Principle

Although sympathetic with the state's fiscal plight, Rhode Island's private, nonprofit hospitals resisted the provider tax concept on two fronts:

*the principle that nonprofit institutions which care for the poor and the sick should not be taxed - especially in Rhode Island, where there are no publicly funded acute care hospitals.

*the grim reality that the tax would drive every hospital in Rhode Island into the red.

Statewide, Rhode Island's 14 private hospitals posted a collective operating gain of only $3.5 million in fiscal year 1991 - a figure that paled in comparison with the anticipated tax burden of $19 million. On the other hand, the statewide hospital community provided about $44 million in free care last year as well as another $10 million in community services such as preparation of Meals on Wheels, free screenings, and free transportation services. When
reimbursement short falls from various government programs such as Medicare and Medicaid are factored in, hospital contributions exceeded $100 million.

**Hospitals Absorb Burgeoning Uncompensated Care Burden**

Rhode Island is one of only five states which have no publicly funded state, county, or municipal acute care hospitals. ALL Rhode Islanders - regardless of the status of their health insurance coverage or their ability to pay for their care - are treated in the state's private hospitals. In fact, Rhode Island's private, nonprofit hospitals serve as the primary source of medical care for many of our poorest citizens - people who have no other point of access to the health care system.

Statewide, the hospitals of Rhode Island provided $44 million in free care last year. By the end of this year, according to industry sources, that figure will have exceeded $50 million - and, they say, there's no end in sight. The ranks of the poor and the medically indigent can only be expected to grow as increasing numbers of Rhode Islanders fall victim to a sour economy, losing their jobs and their health insurance. The plan sanctioned by the General Assembly - allowing hospitals to provide free care for the poor, rather than forcing them to buckle under a heavy tax burden - will enable the state's private, nonprofit hospitals to survive as well as sustain their charitable mission.

Submitted by Ken Boyer, Director of Engineering Woman's and Infants Hospital Rhode Island

**NATIONAL RECYCLING AND EMISSIONS REDUCTION PROGRAM**

The Prohibition on Venting and Regulations to be Proposed under Section 608 Revised Summary

**INTRODUCTION**

Effective July 1, 1992, section 608 of the Clean Air Act (the Act) prohibits individuals from knowingly venting ozone depleting compounds used as refrigerants into the atmosphere while maintaining, servicing, repairing, or disposing air conditioning or refrigeration equipment. Some types of releases are permitted under the prohibition. First, technicians releasing "de minimis" quantities of refrigerant in the course of making good faith attempts to recapture and recycle or safely dispose of refrigerant are not subject to the prohibition. Second, refrigerants emitted in the course of normal operation of air conditioning and refrigeration equipment, as opposed to during the maintenance, servicing, repair, or disposal of this equipment, are not subject to the prohibition. Thus, emissions due to leaks and mechanical purging, which occur during operation of equipment, are permitted under the prohibition. Third, mixtures of nitrogen and R-22 that are used as holding charges or as leak test gases are not subject to the prohibition because in these cases, the ozone depleting compound is not used as a refrigerant.

In addition to establishing the prohibition on venting, the Act also requires the U.S. Environmental Protection Agency (EPA) to develop regulations that limit emissions of ozone-depleting compounds during their use and disposal to the "lowest achievable level" and that "maximize recycling." EPA is currently developing regulations that would propose:

*service practices to maximize
recycling of ozone depleting compounds (both chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs)) during the servicing and disposal of air conditioning and refrigeration equipment

*equipment, technician, and reclaimer certification programs

*sales restrictions for ozone depleting refrigerants

*safe disposal requirements to ensure removal of refrigerants from goods that enter the waste stream with the charge intact (e.g., motor vehicle air conditioners, home refrigerators, and room air conditioners)

The description represents EPA's current thinking. As the proposal is still under development, the proposed regulation may change prior to publication. EPA plans to issue the proposed regulation this summer. After a 45 day public comment period, EPA will address comments and issue the regulation in final form.

As the proposal has not yet been issued, this regulation will not become final by July 1, 1992. However, the prohibition on venting, which is part of the Act itself, still goes into effect on July 1, 1992. EPA does not have the authority to postpone this effective date.

Table 1

| Standards for Grandfathering of Recovery and Recycling Equipment Manufactured Before January 1, 1993 (excluding equipment used with small appliances) |
| Type of Air Conditioning or Refrigeration |
| Equipment with which Recycling or Recovery Equipment Is to Be Used |
| Inches of Vacuum that Recovery or Recycling Equipment Must Achieve |
| High Pressure Equipment with a Charge of Less than 50 Pounds (R-12, 22, 500, 502) | 4 |
| High pressure equipment with a charge of more than 50 pounds | 4 |
| Equipment at Intermediate or Low Pressure (R-11, 113, 123) | 25 |

Under the planned proposal, recovery equipment intended for use with small appliances, such as household refrigerators, household freezers and water coolers, would be required to recover 80-90 percent of the refrigerant in the system.

EPA data indicates that most recovery and recycling equipment currently on the market can meet the standards described above. Under the planned proposal, self-built equipment would be grandfathered provided it met the standards described above. EPA may propose that grandfather equipment be retired after January 1, 1998.

EPA is aware that production back-orders make recovery and recycling equipment increasingly difficult to obtain. Possession of a purchase order for such equipment dated before July 1 will be considered in deciding whether or not to pursue an enforcement action.

REFRIGERANT RELEASES THAT ARE NOT ASSOCIATED WITH EFFORTS TO RECOVER OR RECYCLE

As noted above, the statutory prohibition on venting outlaws the knowing release of refrigerants during the maintenance, service, repair, or disposal of air conditioning and refrigeration equipment, except for de minimis releases associated with good faith efforts to recover or recycle the refrigerant. EPA recognizes that some common maintenance and repair procedures that are not associated with efforts to recover or recycle may release a small quantity of refrigerant. Such release constitute violations of the prohibition on venting. However, the Agency will consider the circumstances of a refrigerant release, including the magnitude of the release and the availability of technology to control the release, in determining whether or not to pursue an enforcement action.

STATUS OF REGULATORY REQUIREMENTS

Service Practice Requirements

Under EPA's planned regulation, technicians would be required to evacuate air conditioning and refrigeration equipment to established vacuum efficiency levels. If the recovery or recycling equipment were manufactured before January 1, 1993, the air conditioning and refrigeration equipment would have to be evacuated to the levels described in Table 1. If the recovery or recycling equipment were manufactured after January 1, 1993, the air conditioning and refrigeration equipment would have to be evacuated to the levels in Table 2 below. (Technicians repairing small appliances, such as household refrigerators, household freezers and water coolers, would be required to recover 80-90 percent of the refrigerant in the system). The Agency plans to request comment on the option of establishing less stringent evacuation requirements for leaking systems and for small air conditioning and refrigeration equipment using R-22.
EPA also intends to propose that refrigerant recovered and/or recycled could be returned to the same system or other systems owned by the same person without restriction. If refrigerant changed ownership, however, that refrigerant would have to be reclaimed (cleaned to the ARI 700 standard of purity and chemically analyzed to verify that it meets this standard).

In developing this regulation, EPA has considered other options permitting limited off-site recycling. These options have not been proposed because there is currently no guarantee that an individual recycling machine is capable of removing acids and moisture that need to be cleaned out to ensure safe refrigerant reuse. In the future a "clean-up" standard may be developed. If and when such a standard is developed, EPA will view off-site recycling with more confidence.

**Equipment Certification**

The Agency plans to propose a certification program for recovery and recycling equipment. Under the program, EPA would require testing of the equipment to ensure that it minimized refrigerant emissions during the recovery or recovery process. The Agency plans to set recovery efficiency standards that would vary depending on the size and type of air conditioning or refrigeration equipment that was being serviced. Under the proposed program, equipment manufactured on or after January 1, 1993 would have to be certified to meet the following standards:

<table>
<thead>
<tr>
<th>Type of Air Conditioning or Refrigeration Equipment Used</th>
<th>Recovery or Recovery Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Air Conditioning or Refrigeration Equipment Used</td>
<td>Recovery or Recovery Equipment</td>
</tr>
<tr>
<td>1. Type of Air Conditioning or Refrigeration Equipment with Which Recycling or Recovery Equipment is to be Used</td>
<td></td>
</tr>
<tr>
<td>2. Inches of Vacuum that must be Achieved by Recovery or Recycling Equipment</td>
<td></td>
</tr>
<tr>
<td>3. High Pressure Equipment with a Charge of Less than 50 Pounds</td>
<td></td>
</tr>
<tr>
<td>High Pressure Equipment with a Charge More than 50 Pounds</td>
<td></td>
</tr>
<tr>
<td>Very High-Pressure Equipment</td>
<td></td>
</tr>
<tr>
<td>4. Intermediate-Pressure Equipment</td>
<td></td>
</tr>
<tr>
<td>5. Low-pressure Equipment</td>
<td></td>
</tr>
<tr>
<td>Under the planned proposal, recovery equipment intended for use with small appliances, such as household refrigerators, household freezers and water coolers, would be required to recover 80-90 percent of the refrigerant in the system.</td>
<td></td>
</tr>
</tbody>
</table>

**Refrigerant Leaks and Purging**

EPA's planned proposal will address refrigerant releases that take place during servicing and disposal of air conditioning and refrigeration equipment because such releases account for between 50 and 95 percent of total emissions over the lifetime of this equipment. Once EPA issues final refrigerant recycling regulations, EPA will begin to focus on emissions of CFCs and HCFCs during normal operations of equipment; these regulations may include requirements for leak detection and repair, and efficiency requirements for purge devices. Although EPA recommends that technicians make every effort to repair leaks and utilize high efficiency purges, technicians will not be required to meet purge-efficiency or leak test requirements at this time.

**Technician Certification**

EPA intends to propose requiring that all individuals handling refrigerants be certified. The Agency is considering requiring four types of certification:

- *for servicing household appliances*
- *for servicing equipment containing less than 50 pounds of high pressure refrigerant (R-12, 22, 500 and 502)*
- *for servicing equipment containing more than 50 pounds of high pressure refrigerant*
- *for servicing equipment using low or intermediate pressure refrigerant (R-11, 113, 123, 114)*

Technicians would be required to pass an EPA-approved test to become certified. Under the proposal, technicians would have to be certified by July 1, 1993, one year after the prohibition on venting goes into effect.

EPA is currently working with industry groups to establish a bank of approved test questions. The Agency intends to allow private entities to run technician certification programs by administering this test. In order to become approved to certify technicians, the organization would have to demonstrate to EPA that it possessed the facilities to perform its administrative, grading and recordkeeping functions. The proposal will outline the procedure organizations should follow to apply to become certifiers.

Although any organization would be able to apply to become an approved certifier, EPA plans to give priority to national organizations able to reach large numbers of people. EPA encourages smaller training organizations to make arrangements with national testing organizations to administer certification examinations at the conclusion of their courses. Although the smaller training organization would not be the official certifier in this case, it would be supplying an essential service in preparing technicians to take the examination.

Several national private organizations have already developed tests and have begun sponsoring "certification seminars" for technicians.

EPA cannot approve such programs
until the final regulations are promulgated. However, EPA expects to consider grandfathering participants in such programs provided the sponsor organizations can provide the additional training or testing necessary to meet final federal standards.

Contractor and Reclaimer Certification

In addition, EPA is considering proposing to require contractor and reclaimer certification. Contractors would be required to have recovery or recycling equipment to perform on-site recycling or recovery and would have to employ only certified technicians for equipment servicing. Recyclers would be required to return refrigerant to the purity level specified in ARI 700 (an industry-set purity standard) and verify this purity using the laboratory protocol set forth in the same standard.

Safe Disposal Requirements

Under EPA's planned proposal, equipment that is typically dismantled on site before disposal (retail food refrigeration, cold storage warehouse refrigeration, chillers, and industrial process refrigeration) would have to have the refrigerant removed and recovered in accordance with EPA's planned requirements for servicing. However, equipment that typically enters the waste stream with the charge intact (motor vehicle air conditioners, household refrigerators and freezers, and room air conditioners) would be subject to special safe disposal requirements. Under these requirements, the final person in the disposal chain (e.g., a scrap metal recycler) would be responsible for ensuring that refrigerant had been recovered from equipment before the final disposal of the equipment. However, persons "upstream" could remove the refrigerant and provide documentation of its removal to the final person if this were more cost-effective.

Hazardous Waste Disposal

If refrigerants are recycled or reclaimed, they are not considered hazardous under federal law. However, in some cases, oil and other materials removed from air conditioners or refrigeration equipment or from recycling or recovery equipment may be considered hazardous. Individuals with questions regarding the proper handling of these materials should contact the RCRA Hotline at 1-800-424-9346 or 703-920-9810.

ENFORCEMENT

EPA will be responding to tips reporting venting after July 1. Under the Act, EPA is authorized to assess fines of up to $25,000 per day per violation for any violation of the Act. In addition EPA may pay an award, not to exceed $10,000, to any person who furnishes information or services which lead to a criminal conviction or a judicial or administrative civil penalty assessed as a result of a violation of the Act. These dollar amounts are maximum figures and are not necessarily the amount that will be assessed or paid in all cases.

It has come to the EPA's attention that some contractors are circulating advertising regarding Clean Air Act requirements that may be misleading. It has also come to the EPA's attention that some manufacturers of air conditioning and refrigeration equipment are stating that use of recycling or recovery equipment not manufactured by them will void the warranty on their air conditioning and refrigeration equipment. EPA will report such practices to the Federal Trade Commission.

FOR FURTHER INFORMATION

For further information concerning regulations under development within the Stratospheric Ozone Protection Branch of EPA, please call: 1-800-296-1996

EFFECTIVE DATES:

July 1, 1992: Prohibition of venting - individuals servicing and disposing of air conditioning and refrigeration equipment are prohibited from knowingly venting refrigerant into the atmosphere

January 1, 1993: Under the planned proposal, the equipment certification requirement would go into effect. Equipment manufactured prior to this date would be eligible for grandfathering.

July 1, 1993: Under the planned proposal, technicians certification requirement would go into effect.

Submitted by
Daniel C. Murphy, Director
Engineering Services
Beth Israel Hospital - Boston

We need your help! Bernard Bolton, Vice President is putting together the society's history and needs info prior to 1987. Please contact him if you can help.
NEW ENGLAND HOSPITAL ENGINEER'S SOCIETY
TOBEY CLARK, Editor
Technical Services Program
University of Vermont
280 East Ave.
Burlington, VT 05401